LISTING OF CLAIMS:

1. (Currently amended) An *in vitro* adhesion cell culture comprising at least 90% $GFAP^+$ cells, wherein

a) one or more cells in the culture have the capacity to differentiate into neurons;

b) the cell culture divides in a culture medium containing serum and at least one proliferation-inducing growth factor, wherein the at least one proliferation-inducing growth factor is selected from the group consisting of EGF, amphiregulin, aFGF, bFGF, TGFα, and combinations thereof; and

c) one or more cells in the culture differentiate into neurons upon withdrawal of both serum and the proliferation-inducing growth factor.

2. (Previously presented) The cell culture of claim 1, wherein greater than 50% of cells in the culture are $nestin^+$ under proliferation-promoting culture conditions.

3. (Currently amended) An *in vitro* cell culture consisting essentially of:

(a) a culture medium containing serum and at least one proliferation-inducing growth factor; and

(b) cells derived from the central nervous system of a mammal, wherein:

(i) at least 90 % of the cells are glial fibrillary acidic protein immunoreactive ($GFAP^+$),

(ii) the cells are capable proliferating in a culture medium containing serum and at least one proliferation-inducing growth factor, wherein the at least one proliferation-inducing growth factor is selected from the group consisting of EGF, amphiregulin, aFGF, bFGF, TGFα, and combinations thereof, and

(iii) the cells are capable of differentiating into at least 10% neurons in the absence of both the serum and the proliferation-inducing growth factor from the culture medium.

4. (Previously presented) The cell culture of claim 3, wherein greater than 50% of cells in the culture are nestin immunoreactive (i.e., nestin^{+}) under proliferation-promoting culture conditions.

5. (Previously presented) The cell culture of claim 1, wherein the cell culture differentiates into at least 10% neurons under differentiation-inducing culture conditions.

6. (Previously presented) The cell culture of claim 1 or 3, wherein the cell culture differentiates into at least 25% neurons under differentiation-inducing culture conditions.

7. (Previously presented) The cell culture of claim 1 or 3, wherein, under differentiation-inducing culture conditions, greater than 50% of differentiated neuronal cells have a GABA-ergic phenotype.

8. (Previously presented) The cell culture of claim 1 or 3, wherein the culture is capable of at least 6 doublings.

9. (Previously presented) The cell culture of claim 1 or 3, wherein the culture is capable of at least 12 least doublings.

10. (Previously presented) The cell culture of claim 1 or 3, wherein the culture is capable of at least 18 doublings.

11. (Previously presented) The cell culture of claim 1 or 3, wherein the cells are derived from the lateral ganglionic eminence (LGE) or medial ganglionic eminence (MGE) of the mammal.

12. (Previously presented) The cell culture of claim 1 or 3, wherein the doubling rate of the

culture is faster than seven days.

13. (Previously presented) The cell culture of claim 1 or 3, wherein the cells in the culture are murine.

14. (Previously presented) The cell culture of claim 1 or 3, wherein the cells in the culture are human.

15. (Previously presented) The cell culture of claim 1 or 3, wherein fewer than 5% of the cells in the culture are β-tubulin III immunoreactive (β-tubulin III$^+$) under proliferation-promoting culture conditions and between 10-40% of the cells in the culture are β-tubulin III immunoreactive (β-tubulin III$^+$) under differentiation-inducing culture conditions.

16. (Canceled)

17. (Previously presented) The cell culture of claim 3, wherein the culture is an adhesion culture.

18. (Previously presented) The cell culture of claim 1 or 3, wherein at least a portion of the cells in culture differentiate into radial glia in the absence of serum from the culture medium.

19. (Previously presented) The cell culture of claim 18, wherein the radial glia are both GFAP$^+$ and vimentin positive.

20. (Previously presented) The cell culture of claim 18, wherein the morphology of the radial glia is:

(a) bipolar;

(b) elongated; and

(c) non-fibrillary.

21. (Previously presented) The cell culture of claim 1 or 3, wherein at least some of the cells in culture, under differentiation-inducing culture conditions, differentiate into neurons that exhibit:

(a) axon-dendrite polarity,

(b) synaptic terminals, and

(c) localization of proteins involved in synaptogenesis and synaptic activity including

(i) neurotransmitter receptors,

(ii) transporters, and

(iii) processing enzymes.

22. (Currently amended) A method of producing a neuronal cell *in vitro* comprising the steps of:

(a) obtaining neural tissue from a mammal, the neural tissue containing at least one $GFAP^+$ cell capable of producing progeny that is a $GFAP^+$ cell;

(b) dissociating the neural tissue to obtain a cell suspension comprising the $GFAP^+$ cell;

(c) culturing the cell suspension in a first culture medium containing serum and at least one proliferation-inducing growth factor to proliferate said $GFAP^+$ cell and produce a $GFAP^+$ cell progeny, wherein the at least one proliferation-inducing growth factor is selected from the group consisting of EGF, amphiregulin, aFGF, bFGF, TGFα, and combinations thereof; and

(d) differentiating the cell progeny in a second culture medium that is substantially free of both the serum and the proliferation-inducing growth factor.

23. (Previously presented) The method of claim 22, wherein the cell is $nestin^+$.

24-41 (Canceled)

42. (Currently amended) A cell population consisting essentially of isolated non-tumorigenic $GFAP^+$ $nestin^+$ cells.

43. (Previously presented) The method of claim 22 wherein under differentiation-inducing culture conditions, greater than 50% of differentiated neuronal cells have a GABA-ergic phenotype.

44. (Previously presented) The method of claim 22 wherein the majority of differentiated neuronal cells are immunoreactive with striatal neuronal markers.

45. (Previously presented) The method of claim 44 wherein said striatal neuronal markers are DLX1 and/or MEIS2.

46. (Previously presented) The method of claim 22 wherein greater than 50% of differentiated neuronal cells are not immunoreactive with cortical neuronal markers.

47. (Previously presented) The method of claim 46 wherein the cortical neuronal markers is PAX6.

48. (Previously presented) The method of claim 22 wherein greater than of differentiated neuronal cells are not immunoreactive with neuronal markers of the medial ganglionic eminence.

49. (Previously presented) The method of claim 48 wherein one of said neuronal markers of the medial ganglionic eminence is NKX2.1.

50. (Previously presented) The culture of claim 1 or 3 wherein under differentiation-inducing culture conditions, greater than 50% of differentiated neuronal cells have a GABA-ergic phenotype.